

AMENDMENTS TO THE CLAIMS:

Please amend claims 1, 4-12, 17, 19, 22, 25, 27, 34 and 36-52 as provided herein. Please add new claims 56 and 57. This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. **(Currently amended)** A modified lactic acid bacterial cell that has been treated with a porphyrin-containing substrate to cause the modified lactic acid bacterial cell to contain at least 0.1 ppm on a dry matter basis of a porphyrin compound.
2. (Canceled)
3. (Canceled)
4. **(Currently amended)** A modified lactic acid bacterial cell according to claim 1 that contains at least 0.1 ppm on a dry matter basis of a cytochrome.
5. **(Currently amended)** A modified lactic acid bacterial cell according to claim 1 that contains at least 0.1 ppm on a dry matter basis of cytochrome *d*.
6. **(Currently amended)** A modified lactic acid bacterial cell according to claim 1 which is of a bacterial species selected from the group consisting of *Lactococcus* spp., *Lactobacillus* spp., *Leuconostoc* spp., *Pediococcus* spp., *Streptococcus* spp., *Propionibacterium* spp., *Bifidobacterium* spp. and *Oenococcus* spp.
7. **(Currently amended)** A modified lactic acid bacterial cell according to claim 6 where the bacterial species is of *Lactococcus lactis*.
8. **(Currently amended)** A modified lactic acid bacterial cell according to claim 1 which, when it is in the form of a cell suspension, is inoculated in a concentration of  $10^7$  cells/ml into low pasteurised skimmed milk having 8 ppm of dissolved oxygen and the milk is allowed to

stand for about two hours at a temperature of about 30°C, the cell consumes at least 25% of the dissolved oxygen.

9. **(Currently amended)** A modified lactic acid bacterial cell according to claim 8 where the cell consumes at least 50% of the dissolved oxygen.

10. **(Currently amended)** A modified lactic acid bacterial cell according to claim 1, which, relative to a cell from which it is derived, has a decreased NADH oxidase (NOX) activity, a decreased lactate dehydrogenase (LDH) activity, or a decreased NOX activity and decreased LDH activity.

11. **(Currently amended)** A modified lactic acid bacterial cell according to claim 10 that has a NOX activity which is decreased by at least 10% under aerobic conditions.

12. **(Currently amended)** A modified lactic acid bacterial cell according to claim 10 that has a LDH activity which is decreased by at least 10%.

13. (Previously presented) A starter culture composition comprising the modified lactic acid bacterial cell of claim 1.

14. (Original) A composition according to claim 13 where the composition is in the form of a frozen, liquid or freeze-dried composition.

15. (Previously presented) A composition according to claim 13 comprising an amount of viable modified lactic acid bacterial cells which is in the range of  $10^4$  to  $10^{12}$  CFU per g.

16. (Previously presented) A composition according to claim 13 which comprises modified lactic acid bacterial cells of two or more different lactic acid bacterial strains.

17. **(Currently amended)** A composition according to claim 13 which further comprises at least one component enhancing the viability of the modified lactic acid bacterial cell during storage.

18. (Previously presented) A method of reducing the oxygen content in a food or feed product or in a food or feed product starting material comprising adding to the product or to the starting material an effective amount of the culturally modified lactic acid bacterial cells according to claim 1.

19. **(Currently amended)** A method according to claim 18 wherein the amount of the modified lactic acid bacterial cell is in the range of  $10^4$  to  $10^{12}$  CFU per g.

20. (Original) A method according to claim 18 wherein the starting material for the food product is selected from the group consisting of milk, a vegetable material, a meat product, a fruit juice, a must, a wine, a dough and a batter.

21. (Previously presented) A method of improving the shelf life and/or the quality of an edible product comprising adding to the product an effective amount of the culturally modified lactic acid bacterial cells according to claim 1.

22. **(Currently amended)** A method of preparing a fermented food or feed product, comprising adding an effective amount of the culturally modified lactic acid bacterial cell according to claim 1 to a food or feed product starting material, wherein the modified lactic acid bacterial cell is capable of fermenting said starting material to obtain the fermented food or feed.

23. (Original) A method according to claim 22 wherein the starting material for the food product is selected from the group consisting of milk, a vegetable material, a meat product, a fruit juice, a must, a wine, a dough and a batter.

24. (Original) A method according to claim 23, wherein the resulting fermented food product is a dairy product including a product selected from the group consisting of cheese and buttermilk.

25. **(Currently amended)** Use of the modified lactic acid bacterial cell of claim 1 for the production of a metabolite produced by the modified lactic acid bacterial cell or by a non-modified cell co-cultivated therewith.

26. (Previously presented) Use according to claim 25 where the metabolite is selected from the group consisting of a lactate, acetaldehyde,  $\alpha$ -acetolactate, acetoin, acetate, ethanol, diacetyl and 2,3-butylene glycol.
27. **(Currently amended)** Use of the modified lactic acid bacterial cell of claim 1 for the production of a bacteriocin.
28. (Original) Use according to claim 27 where the bacteriocin is selected from the group consisting of nisin, reuterin and pediocin.
29. (Previously presented) A method of reducing the oxygen content in a food or feed product or in a food or feed product starting material comprising adding to the product or to the starting material an effective amount of the starter culture composition according to claim 13.
30. (Previously presented) A method of improving the shelf life and/or the quality of an edible product comprising adding to the product an effective amount of the starter culture composition according to claim 13.
31. (Previously presented) A method of preparing a fermented food or feed product, comprising adding an effective amount of the composition of claim 13 to a food or feed product starting material, wherein the composition is capable of fermenting said starting material to obtain the fermented food or feed product.
32. (Previously presented) Use of the composition of claim 13 for the production of a metabolite produced by the composition or by a non-modified cell co-cultivated therewith.
33. (Previously presented) Use of the composition of claim 13 for the production of a bacteriocin.
34. **(Currently amended)** A modified lactic acid bacterial cell according to claim 6, where the bacterial species is *Lactococcus lactis* strain CHCC373 deposited under the accession number DSM12015.

35. (Previously presented) A composition according to claim 13 which includes a bacterial nutrient, a cryoprotectant or a bacterial nutrient and a cryoprotectant.
36. **(Currently amended)** A modified lactic acid bacterial cell according to claim 1 which contains at least 0.2 ppm on a dry matter basis of a porphyrin compound.
37. **(Currently amended)** A modified lactic acid bacterial cell according to claim 1 which contains at least 1 ppm on a dry matter basis of a porphyrin compound.
38. **(Currently amended)** A modified lactic acid bacterial cell according to claim 1 which contains at least 5 ppm on a dry matter basis of a porphyrin compound.
39. **(Currently amended)** A modified lactic acid bacterial cell according to claim 1 which contains at least 20 ppm on a dry matter basis of a porphyrin compound.
40. **(Currently amended)** A modified lactic acid bacterial cell according to claim 1 which contains at least 60 ppm on a dry matter basis of a porphyrin compound.
41. **(Currently amended)** A modified lactic acid bacterial cell according to claim 1 which contains at least 80 ppm on a dry matter basis of a porphyrin compound.
42. **(Currently amended)** A modified lactic acid bacterial cell according to claim 1 which contains at least 100 ppm on a dry matter basis of a porphyrin compound.
43. **(Currently amended)** A modified lactic acid bacterial cell according to claim 1 which contains at least 0.5 ppm on a dry matter basis of a cytochrome.
44. **(Currently amended)** A modified lactic acid bacterial cell according to claim 1 which contains at least 10 ppm on a dry matter basis of a cytochrome.
45. **(Currently amended)** A modified lactic acid bacterial cell according to claim 1 which contains at least 40 ppm on a dry matter basis of a cytochrome.

46. **(Currently amended)** A modified lactic acid bacterial cell according to claim 1 which contains at least 70 ppm on a dry matter basis of a cytochrome.
47. **(Currently amended)** A modified lactic acid bacterial cell according to claim 1 which contains at least 90 ppm on a dry matter basis of a cytochrome.
48. **(Currently amended)** A modified lactic acid bacterial cell according to claim 1 which reduces the amount of oxygen present in a medium by at least 1% per hour.
49. **(Currently amended)** A modified lactic acid bacterial cell according to claim 1 which reduces the amount of oxygen present in a medium by at least 20% per hour.
50. **(Currently amended)** A modified lactic acid bacterial cell according to claim 1 which reduces the amount of oxygen present in a medium by at least 40% per hour.
51. **(Currently amended)** A modified lactic acid bacterial cell according to claim 1 which reduces the amount of oxygen present in a medium by at least 70% per hour.
52. **(Currently amended)** A modified lactic acid bacterial cell according to claim 1 which reduces the amount of oxygen present in a medium by at least 90% per hour.
53. (Previously presented) A method for the production of a metabolite comprising adding the composition of claim 13 to a starting material and maintaining the resulting mixture under conditions suitable to produce the metabolite.
54. (Previously presented) A method for the production of a metabolite comprising adding the composition of claim 13 and a non-modified cell co-cultivated with the composition and maintaining the resulting mixture under conditions suitable to produce the metabolite.
55. (Previously presented) A method for the production of a bacteriocin comprising adding the composition of claim 13 to a starting material and maintaining the resulting mixture under conditions suitable to produce bacteriocin.

56. (New) A modified lactic acid bacterial cell of claim 1 which exhibits a modified aerobic breakdown of carbohydrates as compared to a lactic acid bacterial cell which has not been treated with the porphyrin compound.

57. (New) A modified lactic acid bacterial cell of claim 1 which is useful in the manufacturing and preservation of food and feed products.